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SiD – Situation-based Didactics

A guide for teachers in vocational training

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In collaboration with the IUFFP training team and with the contribution of many teachers

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FOREWORD

Teaching is an art. *Didactics* is the art of teaching. In earlier times, professions that required not only craftsmanship but also inspiration, creativity and initiative were considered as "arts". In the age of engineering and technology, recalling this tradition certainly provides an impetus – not only to capture the essence of the teaching profession, but also to find the necessary reference points and resources in *didactics,* and this can make our profession interesting and productive for our students.

The tradition of didactics comes from the Greek word *didàskein* meaning to teach, and it has two sides to it which have always complemented each other: the *What* and the *How* of teaching – in other words, the *contents* and the *methods* of teaching. In recent years, a *didactic* has established itself that is considered rather as a technique and that has allowed a variety of methods to flourish, including some products of the new information and communication technologies that have opened up new horizons for the development and representation of knowledge, which were unthinkable until recently. Nevertheless, one can say with good reason that there is a close relationship between the *content* that needs to be taught and the *way* in which it is taught (and learnt), and that didactics does not provide a universal magic formula. The didactics of history should not be equated with the didactics of vocational studies for electricians or sales staff, even when it is a matter of didactics in all three cases and we can therefore assume that there are common aspects that have something to do with our understanding of "general didactics". Specialist didactics, subject didactics or didactics related to a given professional field are indispensable, but they can be classified into one common reference framework.

In other words, we, as teachers, need a dual didactic tool in vocational training just like in other academic areas, which consists of

- a reference framework and a model that gives our classes a basic direction but that also leaves adequate room for our ideas, our imagination and our decisions, and
- specific techniques, methods and tools adapted to the subject being taught.

These are the two levels of didactics: on the one hand the general and, on the other hand, the subject-specific level, which complement each other.

This guide focuses on the general didactics level. The Situation-based Didactics (SiD) will be presented, which claims to provide a high-level framework for the needs of teaching and learning at vocational schools, at external courses and in business, and which leaves room at the same time for specific didactics with their techniques and methods.

The guidance is divided into six chapters:

- After an introductory presentation in the first chapter, SiD is illustrated in the second chapter using six specific examples of implementation by teachers in different fields. These examples enable readers to quickly form a picture of the practical application of SiD in the classroom.
- The third chapter presents six arguments for using SiD. In doing so, reference is made to issues which teachers have to deal with in their daily professional life, and to ideas and models with which they are confronted in their didactical planning.
- Four core concepts of SiD are introduced in the fourth chapter: the didactic transposition, the didactic scenario, the virtuous didactic cycle and the didactic phases.

- The fifth chapter describes the main phases of SiD in detail, that is, it postulates a type of didactic grammar that should make it easier for teachers to specifically implement SiD in their daily professional life.
- Finally, the 13 challenges of SiD are summarised in the sixth chapter.

This SiD guide is based on extensive theoretical ideas, which have proven important over a decade of experience in training.

However, it has been brought to life only through practice and thanks to the work of many teachers. The numerous teaching sequences that they have developed and implemented have allowed us to constantly review and adapt the basic ideas and have provided us with a comprehensive set of illustrative material. These teachers deserve our heartfelt thanks.

1 SITUATIIN-BASED DIDACTICS (SiD)

The core idea of situation didactics is not new. It is found in various interpretations and versions in many pedagogical and didactic traditions; one comes across it in the daily practice of those teachers who can look away from the teaching materials and the bookish knowledge and focus on real life. The core idea can be summarised with two basic questions:

- How can we ensure not only that the acquisition of knowledge at school is an end in itself but that this knowledge can provide answers to the needs of everyday life, especially the requirements of day-to-day professional life?
- How can we ensure that the empirical knowledge from everyday life also helps with learning at school and meets this purpose sensibly?

As teachers, we expect didactics to give us answers to these questions. We need help to decide, always on the basis of and within the curriculum, what *content* – that is, what knowledge and skills – should be taught, and especially *how* it can be taught. We need a kind of grammar for teaching that gives us guidance and that can form the basis of our professional self-understanding, but that at the same time gives us the necessary freedom to find our own language and mode of expression.[1]

To get answers to the above questions, SiD uses the concept of *situation*[2] which leads us to the first important consideration. Our conduct and actions and our activities (private as well as public and professional) start to take shape in space and time in a sequence of different *situations*, simple and complex, satisfying and frustrating – situations that overlap and intersect. Situations are what our life is made of.

A second consideration: if we could succeed in aptly describing a reasonable selection of meaningful *situations*, we would have a basis on which we could build, and which we could at least partially refer to when teaching and learning in school. We should capture and hold on to these *situations*, bring them to the classroom and use them as a means to fill the learning material with meaning. Basically, we are already moving in this direction if we use everyday examples at school to illustrate some specific content or to relate an exercise better to reality.

This approach is the pillar of teaching and learning in SiD. Nevertheless, it needs to be stated clearly that SiD does not claim to be exclusive and should be implemented with the necessary caution. Teaching and learning are processes that are too complex and challenging to be ade-

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[1] SiD actually provides the answer to the requirements that are described in the competence profile of vocational school teachers. Refer to the publication "Le attività del docente di scuola professionale: profilo di competenza" (IUFFP, Lugano 2014), and especially competence 1-5, with the corresponding situations.

[2] The concept of the situation is not only used often in everyday life, but has also gained importance in scientific debates, in philosophy, sociology and psychology, as well as in pedagogy and in didactics.
The etymology of the term takes us to the Latin verb *situare,* that is, to set, place or position, and to the noun *situ* – location. Thus *situation* implies *to be situated* in space and in time, depending on a number of basic conditions that have an effect not only on the condition of a person but also on their actions. In other words, our existence, our life and our activities take place in situations that are shaped by different circumstances, which we can also shape on our part.
Actions and events take place in situations which relate various factors to each other, combine them and classify them in spatial and temporal dimensions. A situation is thus determined by at least the following elements:
– the (objective or subjective) conditions of the environment
– the players (actors)
– the applicable standards (rules)
– the actions taken
Daily life consists of many situations. In our context, it makes sense to distinguish between situations from everyday life (the living world) and situations from professional activity (the professional world).

quately explained and supported using a single didactic approach.

It goes without saying that a selection has to be made from the various *situations* of life. From the didactic point of view, we are interested in those situations that are particularly *significant* and *exemplify* important moments of professional or everyday life. The situations help us in relating and combining two perspectives: that of life and that of the school and the classroom session.[3] To put it differently, it is a matter of converting specific **life situations** – situations directly experienced by the students or situations depicted by models by way of example – into **didactic situations**, which one can reflect upon and using which one can acquire knowledge and competence. This is the challenge of SiD.

We can illustrate this challenge as follows. Two important "guests" who want to get involved knock on the doors of learning centres, i.e. the classrooms, workshops etc. where learning takes place using didactical situations. The first guest is *expertise,* representing traditional knowledge, which is reflected in the various subjects and curricula, in the school books and, last but not least, in the background knowledge of the teachers; the second guest is *experience*, who possesses direct experience of the students as well as the experience of "others", which we can access indirectly. These two guests have difficult and rebellious characters, and they do not always agree with each other. It is our job as teachers to create "hospitable" conditions using didactics, so that the students benefit optimally from both these guests and can learn from them in an interesting, motivating and effective manner.

Before we get into an in-depth discussion on the SiD approach, we propose that we should seek to understand it better using some life situations that have been converted into didactic situations by vocational training teachers. The examples are taken from various vocational school teachers and do not claim to be a model; rather, they are meant to illustrate what it means when one brings life situations to school and converts them into didactic situations.

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[3] At this point, reference is made to the term "comptence", which is used often in education. According to its etymology (cum-vergere, lat.), the term describes combining, coalescence or convergence. In connection with acquiring skills, this relationship or convergence between real life and the learning material seems important. Incidentally, we refer to the following definition of skill:

Competence is

> the ability of individuals or groups, in certain situations or classes / families of similar situations that are part of a profession or that are meaningful in some way for the acting subjects, to act appropriately. Competence is based on activating three types of available individual or collective *resources*: *expertise*, *abilities* and *attitudes*.

These resources are defined as follows:

- **Declarative knowledge** is the "knowledge" which relates to facts, concepts or approaches, and which a person possesses either actively or passively, explicitly or implicitly. Expertise is generally declarative, that is, it is communicable. In other languages: French savoir (savant), Italian conoscenze, English declarative knowledge / know that / know why.
- **Abilities** include cognitive skills, communicative/social skills and practical/motor skills. Abilities have a procedural nature; they therefore show up in actions. One can also describe them as operational skills, techniques or routines if they become automatic, i.e. if they become mechanical actions that are carried out without conscious control. Skills can also partly have a "transverse" nature, that is, they can relate to different situations and areas of application, especially cognitive and communicative skills. In other languages: French savoir-faire, Italian capacità (abilità), English skill / know-how, skills.
- **Attitudes** are behaviours that reveal themselves in situational action, at the physical, social and mental level. Although they can be based on inherent predispositions – characteristics or talents – they can also be acquired and developed. An important component of attitudes concerns personal values, and consequently the ethical and moral decisions that a person takes. Just like skills, attitudes can also have a transverse effect. In other languages: French savoir-être, Italian atteggiamenti, English attitudes.

2 FROM LIFE TO DIDACTIC SITUATIONS: SIX EXAMPLES

The situations that we experience every day are hidden in the "maze" of everyday life – in a family setting, in restaurants, in public places or at work, for instance – and they are therefore not easy to detect or capture. Sometimes it is enough to use one's imagination, but we might need to apply *techniques* to remove a situation from its context, to identify it and to capture it. The following examples show how to identify representative and important situations and how to classify them under various types – on the one hand the real situations experienced and on the other hand the situations developed using models. The examples, to which reference will be made several times in the following discussion (referred to as S I, S II etc.), are taken from different domains and professions, but in the end it comes down to making a bridge between the reality of life and school, between practice and theory. The examples are described very briefly and schematically, first the life situation and then the didactic situation.

2.1 Situation I: English in chemical and pharmaceutical laboratories[4]

Professional situation

Chemical and pharmaceutical system technicians with tertiary-level training in chemical and biological laboratories. In their work, they need to follow defined procedures, which may be standardised or experimental. Standard procedures are generally described in English in various manuals (American, European, Japanese pharmacopoeia) or on specialised websites. If the professionals are working for an international company with headquarters in an English-speaking country, then they not only have to understand these processes very well, but they should also be able to communicate efficiently and confidently with English speakers.

To ensure that these system technicians can successfully cope with these and other professional situations, they need to have an appropriate knowledge of English. They need, among other things, the following resources:

- declarative knowledge
  Technical vocabulary, idioms and linguistic structures that are typically found in technical texts and in laboratory communications
- Skills
  To understand important information concerning the laboratory activities precisely and to reliably communicate the same information orally and in writing
- Attitudes
  Attitudes that are important for laboratory work, such as a sense of responsibility, discipline, accuracy, etc.

[4] This situation has been described by DC, a lecturer at the professional college of Trevano / TI, and was implemented in the classroom.

Didactic situation

The technicians complete the tertiary-level training, which includes English, on a part-time basis. One should mention at the outset that, in this case, the lecturer has personally understood the workflows in a pharmaceutical laboratory during a two-week internship. Based on the life situation described above, he has developed a didactic scenario that covers a total of 7-8 lessons. To summarise briefly, the following stages will be gone through:

a. Two weeks before the actual work with the didactic scenario, the students will be asked to focus on the use of English in their laboratories and to collect documents relating to the prescribed procedures. Three students selected from three different companies will present the results of their research, support it with relevant documents and illustrate it with photos or short video clips if necessary (which is easy to do nowadays using smartphones).
b. The first lesson is dedicated to the presentations of these three students. The presented situation is analysed in the second lesson, when the experiences of other students are incorporated and a list compiled using linguistic knowledge (words, phrases, etc.), the necessary skills and attitudes.
c. In the third lesson, the teacher analyses the linguistic structures (grammar, sentences, etc.) and the vocabulary (etymology, etc.). Following this, the documents (procedures, statements, etc.) are reviewed in the fourth lesson as part of group work, and the vocabulary and structural compilations are supplemented. All the groups will present the results of their work in the fifth lesson.
d. The sixth lesson is based on a video clip of a workflow in a chemical laboratory. Working with a partner, the students write a report on the workflow and then present it orally.
e. A learning check takes place in the seventh lesson. The results are then returned to the students, and this is followed by a stocktaking exercise.

2.2 Situation II: Briefing meeting with a client (3D polydesigner)[5]

Professional situation

As part of their work to acquire orders, some 3D polydesigners (i.e. interior decorators / interior designers) prepare themselves for an initial discussion with a potential client. In this discussion, they have to get all the information they need to prepare the final offer, in particular:

- the final date for submitting their offer
- the final date for executing the order
- the available budget
- the specific requirements of the client.

The briefing is also used to present their initial ideas and to make proposals.

To make the briefings as effective as possible, i.e. to make them competent, the 3D polydesigners need access to appropriate resources; in this specific case, these are the following:

[5] This situation has been described by FC, a lecturer at the CSIA vocational school in Lugano / TI, and was implemented in the classroom.

- Declarative knowledge
  Technical vocabulary, materials and work processes, costs, current trends, etc.
- Skills
  Appropriate communication with customers, proceeding purposefully while gathering information, identifying the preferences and needs of the client, preparation of a schedule, etc.
- Attitudes
  Friendliness, respect, punctuality, etc.

Didactic situation

The didactic situation is developed with a class of 3D polydesigners in a full-time vocational course as part of their Professional Studies course, in collaboration with the studio. Two teachers are involved. The professional situation is converted into a didactic scenario that covers 10 lessons and is divided into the following stages:

a. Before starting the course module, the two responsible teachers explain the project and provide initial information for the purpose of briefing discussions and regarding the information that has to be obtained from the client. A brief exchange follows with the students.
b. In a two-hour teaching module, the briefing discussions are simulated with two potential clients. The simulations are analysed and the information obtained is compiled under the guidance of the two teachers.
c. The third stage again covers two lessons. First, there is a comprehensive theoretical input to enable the students to identify and classify the resources required to deal with the situation, always in relation to the simulations experienced. Then the students, working with a partner, are told to prepare drawings, prototypes and computer representations of the different ideas, which are submitted to the client.
d. In the fourth stage, which covers six lessons, a second briefing discussion is simulated with the client where the specific ideas are presented. Video clips are made of these briefings, which are then discussed in detail. The clips are also used as a basis for interactive videos, which illustrate the main factors for the briefings.

2.3 Situation III: Measuring blood pressure (healthcare assistant)[6]

Professional situation

A healthcare assistant, R.N., is taking care of 75-year-old Mrs V.V., who is suffering from cardiac insufficiency and high blood pressure. While measuring her blood pressure, R.N. notices that the cuff is too tight, and wonders if the high readings might be because of that. She repeats the measurement with a larger cuff, shares the blood pressure reading with Mrs. V.V. and records it, too. She then shares her observations and uncertainty with the qualified nurse.

[6] This situation has been described by NG, a lecturer at the SCOS cantonal school for social professions in Mendrisio / TI, and was implemented in the classroom.

To deal with the situation correctly, i.e. competently, the healthcare professional has to activate the following resources:

- Declarative knowledge
  Specific technical terminology, symptoms, diagnostic purpose and measurement parameters, blood pressure measurement procedure, anatomy of the circulatory system, etc.
- Skills
  Identification of symptoms indicating a need to measure the person's blood pressure, doing so correctly, updating the case sheet correctly, identifying and avoiding errors, etc.
- Attitudes
  Respect, confidentiality, sense of responsibility, etc.

Didactic situation

The didactic implementation is carried out in a class with professional healthcare staff in their second year of training. Six lessons are planned in the following sequence:

a. Four weeks before starting the work, the teacher presents the project with the didactic scenario and asks two students to document how blood pressure is measured at their institution.
b. In the first lesson of the module, the two students present their experiences. Then, the students analyse the information in a group, based on a specific task.
c. During the next two lessons, the groups present their ideas, and then a detailed comparison is made of the two situations. This work leads to a structured representation of the professional situation.
d. The teacher makes a theoretical input over the following hour. The various resources needed to cope with the professional situation are clarified during this session.
e. There is a joint stocktaking at the end of the scenario, and the teacher gives feedback.

2.4 Situation IV: Measuring height at a construction site (foreman)[7]

Professional situation

When opening a construction site, the architect asks the foreman to measure the height of the structure to be put in place at several important reference points. The purpose is to check whether these points comply with the approved construction plans. The measurement has to be done from a fixed point that has been precisely defined by the surveyor. An optical levelling device (or a spirit level) is available to perform these measurements. The architect not only wants information regarding the reference points to be checked, but also the individual readings, which need to be entered in a specific table along with the calculations that led to these results.

[7] This situation was described and implemented in the classroom as part of the "Matesi" project by GN, a lecturer at the vocational school in Mendrisio / TI.

To perform the measurement correctly, the foreman requires competences that are based on the following resources:

- Declarative knowledge
  Height data and height measurements, equipment to be used, surveying procedures, etc.
- Skills
  Correct us of the equipment, performing the measurements, recording the data and carrying out a critical review etc.
- Attitudes
  Punctuality, accuracy, critical attitude towards checking measurements, etc.

Didactic situation

The didactic scenario is carried out with a class of construction trainees in their third year of apprenticeship and usually requires two modules of two lessons each, with the following structure:

a. The curriculum and a textbook on technical calculations for construction workers present the topic of "Surveying". The teacher introduces the topic two weeks in advance and asks some students to take photographs and video clips of surveys done on their sites.
b. At the beginning of the first module, the students talk about their experiences and show the photographs and video clips that they have taken. The teacher supplements the presentations with his/her own material. The procedures for determining the specified height are documented (using optical levelling devices or a spirit level).
c. In the second lesson, the students describe their experiences with height measurements based on the information and criteria provided by the teacher. The whole exercise ends in a written summary.
d. The second module of two lessons begins with simulating a survey. The task is carried out as group activity in the outside area of the school.
e. In the final lesson, a brief consolidation exercise is planned in groups, and then the students do an individual exercise on worksheets, which is evaluated.

2.5 Situation V: Example from everyday life. Reading and understanding images (business school, history and civics)[8]

Situation in everyday life

Often, if not every day, we are exposed to information communicated via images of various kinds (photographs, posters, icons, movies, etc.). The image – the most popular language of our times – is, however, a treacherous means of communication. Its statement seems readily understandable, and it is obviously accessible to everyone, which can lead to a superficial reading and careless interpretation. A variety of resources are needed to understand an image accurately, especially when it pertains to the propaganda images of a totalitarian regime, as in this case. This is a complex situation, which consists of at least three dimensions: the concept of the totalitarian regime, the concept of propaganda and image analysis.

Citizens should have at least the following resources:

- Declarative knowledge
  - Characteristics of totalitarian regimes (TRs), the tools of power of TRs, major TRs of the last century, etc.
  - Characteristics of propaganda and its functions in a TR, differences between propaganda and information, etc.
  - Basic elements of image analysis, etc.

- Skills
  - Identifying and explaining the characteristics and tools of TRs
  - Identifying and explaining the characteristics of propaganda, explaining the function of propaganda in a TR and distinguishing between information and propaganda
  - Analysing an image and interpreting the main elements, etc.

- Attitudes
  - Sense of responsibility, civic awareness, interest in current affairs, observation skills, critical awareness, curiosity, etc.

Didactic situation

The didactic situation is discussed in a second year class in the business school (full-time school) and covers 12 lessons of 45 minutes each. The teaching cycle is divided into three stages. The situation is selected and the resources necessary to deal with it are determined in the first stage. In the second stage, these resources are processed systematically in relation to all three dimensions of the situation and are expanded. The third stage involves learning assessment.

[8] This situation was described by SS, lecturer at the business school in Locarno / TI, and was implemented in the classroom.

The process in detail:

a. The students are asked to bring an image to the next lesson related to a current event that has made an impression on them.
b. In the first lesson, an image is selected that represents the propaganda of a totalitarian regime. The given situation is discussed and analysed to determine the resources necessary to understand and deal with it. Question: What circumstances and conditions should one take into account in order to understand the image?
c. In the second and third lesson, the concept of the totalitarian regime is consolidated.
d. There is a formative learning assessment in the fourth lesson, with particular regard to the ability to identify and explain the characteristics and tools of power of totalitarian regimes.
e. The fifth and sixth lessons focus on consolidating the concept of propaganda.
f. Lessons seven to nine cover other analytical exercises on consolidation and formative learning assessment.
g. The development and consolidation of image analysis skills and the necessary knowledge are dealt with in lesson 10.
h. A final learning assessment is done in lessons 11 and 12, consisting of a simulation and creating a poster.

2.6 Situation VI: Conducting a customer consultation discussion (External courses for business development employees)

Professional situation

Sales or consultation sessions with clients are important professional situations for business development staff. The learning objectives of the curriculum for the second year of training include the development of appropriate comptences.

Employees are often asked to present products or services and their special features to internal or external customers during a discussion. During the discussion, the employees should capture the needs of the customers, identify various options, present the appropriate products and advise the customers regarding the most suitable offers.

Many resources are needed to conduct such a consultation discussion effectively:

- Declarative knowledge
  - Phases of a consultation discussion and its special features, typology of the customers, typology of questions in such discussions, basic sales techniques, different types of customer needs

- Skills
  - Planning and preparing a consultation or sales discussion
  - Effectively conducting the discussion in the various phases (receiving the customer, discussion, conclusion)
  - Asking open questions to identify the customer's needs
  - Asking closed questions to confirm information or the customer's decisions

  - Making interesting offers to the customer
  - Listening to the customer attentively

- Attitudes
  - Friendliness, politeness, patience, well-groomed appearance, openness

Didactic situation

The implementation of the didactic situation with a group of students in an external course involves between eight and ten lessons, divided into four stages. The first stage consists of an assignment that needs to be done before the actual work related to the didactic situation in the business operations. In the second stage, the situations from the business operations are presented and analysed. The third stage requires a contribution from the teachers to consolidate the findings from the situation analysis and to expand them. In the fourth and final stage, the competences of the students are consolidated using simulations in the classroom and practical exercises at the place of work.

a. The teacher asks 5 students to make video clips of the consultation and sales situations in their business operations.
b. In the classroom, the 15 students are divided into groups of three; each group gets a computer on which they can view the recorded video sequences. The author of the video clip is a member of the group and can, if necessary, explain the situation further. The groups record the positive aspects as well as areas for improvement in a table for each phase of the discussion.
c. The groups present the situation and their observations on the positive points and on the areas for improvement in the various phases of the discussion. Based on these five situations, and together with the students, the teacher develops some general principles for conducting consultation sessions successfully and arrives at a list of necessary resources. Subsequently, the students practise the practical implementation of the identified skills and attitudes in simulated consultation and sales discussions.
d. Based on the positive and negative elements identified by the students when making the video clips, the teacher now gives some theoretical input about the behaviour displayed when receiving a customer, formulating open and closed questions, engaging in active listening and saying goodbye to the customer. To conclude, a video clip of a consultation discussion with an experienced salesperson is shown to illustrate the points that were discussed in theory previously and to consolidate the students' learning.
e. In order to consolidate the content, the teacher proposes two practical activities: first, a simulation in the classroom and, secondly, conducting a real customer discussion in the work environment. The classroom simulation is carried out with a partner starting from a specific work assignment and is recorded on video. Another group of two students and the teacher look at the video clip and make suggestions for improvement.
f. At the end of the training cycle, the teacher asks the students to apply their new comptence in the near future at their workplace. They should also document their discussions in writing and should conduct a self-evaluation with regard to the competence acquired.

3 WHY SHOULD WE WORK WITH SITUATIONS? SOME VALID ARGUMENTS

In the first few chapters, we presented the basic idea of SiD – systematically based on important life situations and converted into didactic situations – and we have demonstrated, using examples, that this principle can be practically implemented in different areas of vocational training and gives good results. Of course there are scientifically based arguments that are based on comprehensive theories from different scientific branches, which may be advanced in favour of the SiD approach, not only from pedagogy and psychology but also from sociology and philosophy. It is not our intention to present a lengthy theoretical discourse at this point; rather, we want to list some easily accessible justifications and arguments that substantiate what has been previously presented. Those who prefer first to deal specifically with SiD and its approaches and tools can skip this chapter and come back to it again later.

When presenting the different arguments, we will also provide definitions of some important terms such as *action*, *knowledge*, *situation*, *competence*, and *resources*.

3.1 Argument 1: Action, knowledge and situations

There is no knowledge without action; there is no action outside of life situations.

Action. "In the beginning was the Deed."[9] In *Faust*, one of the greatest works of world literature, Goethe recalls, in his incomparable way, that man is created from the action or the deed. He finds his origin not in the Word but in action, and he becomes himself through the action that lives, thinks, considers and learns. Hence the origin of knowledge lies in action, although it needs to be emphasized that this action represents a necessary condition for knowledge, but not a sufficient condition. The child discovers their environment with their senses by watching and acting on it; but to store this environment in their mind in the form of knowledge, *cognitive processing* has to take place. The same applies to us, and so we can argue that we see the world differently when the knowledge conditions change. Knowledge comes from action and returns back to action in a constant dynamic interaction.

Our existence is linked to two types of actions. One type acts towards the outside and the other towards the inside. With our actions, we have an effect on other people and on things (nature or objects) but also on ourselves. The actions that act inwards are contemplative and reflective in nature. It should be noted that the actions acting inward activate not only the brain and its functions, but also the body. For example, think about how much energy is required for concentration, or how much meditation depends on the ability to control the body.

Knowledge. Knowledge is a *representation* that we form about the world, i.e. about ourselves, the things around us and our actions. Many skills are subject-linked, that is, they belong only to one single individual; but we share many skills with other individuals and they have become part of a common and valuable inheritance that needs to be acquired and taught.

In relation to knowledge, we can experience an interesting aspect of this in everyday life. There are things that we *do*, but not *consciously*, because they have become automated habitual actions for us, which we may not even be able to describe accurately. The reverse is also true: we *know* things, but we cannot convert them into *action*. A good example is language and grammar. Few of us know all the rules of grammar in detail, but we all can

[9] Goethe, Faust – a tragedy. Chap. 6

speak our mother tongue (more or less) without mistakes. Conversely, we may know the grammar and the words of a language, but without being able to speak it fluently. Cognitive psychology has dealt with this question over a long period and has come to the conclusion that there are different forms of representing knowledge. Therefore we can create a typology of knowledge, which relates to at least two basic criteria: *declarative* or *procedural*, *implicit* or *explicit*. This results in the following simple matrix (Table 1):

Knowledge	implicit	explicit
declarative	Facts, concepts and procedures that we know "passively", but cannot explain or describe	Facts, concepts and procedures that we know and can also name and describe
procedural	Processes and actions that we can carry out routinely and automatically without being aware of it, but that we can describe only with great difficulty	Processes and actions that we can carry out and also describe

Table 1: Implicit / explicit, declarative / procedural knowledge

Many of the things that we know, and even some of the things that we can do, were learned at school – for example, certain facts about history, writing and arithmetic. However, it is also clear that we have acquired a considerable proportion of our knowledge and skill, probably the majority, outside school, e.g. the skill of riding a bicycle and knowledge about different places and their particular features. We are aware of some of our knowledge and skills, and we can explain them, but we have a more or less vague idea about the rest – we know about things from somewhere and we remember them. For some things, especially practical skills, it is enough for us to just know that we possess them. The things that we know implicitly we may have learned from experience, and they may have disappeared from active consciousness but are still stored in our memory. The example of language and grammar as mentioned above clearly shows what is meant by implicit and explicit knowledge and skills. It is the same with our professional actions as teachers: we have mastered our profession and we perform it every day, but because we have automated many things and perform them routinely based on an implicit mental plan, we find it difficult to describe them accurately.

Situations. We know one thing for sure: knowledge – whether implicit or explicit – supports our actions, and it is directly or indirectly linked to our actions. Knowledge and action are mutually dependent, and this reciprocal link becomes specific in professional or private everyday *situations*. (See argument 3 for more explanation about the term *situation*)

Let us take a specific situation from our profession as teachers. We need to prepare and conduct an examination to assess the progress of our students. We can handle this task thanks to the knowledge and skills that we have acquired as a result of our experience – partly of previous actions (e.g. of exams that we experienced as students), and partly from our studies, our deliberations and our intuition. However, when we prepare for and conduct this examination, we also review, update and expand our knowledge. The link between knowledge and action is therefore not linear but circular: knowledge is not there first and then followed by action. Like the chicken and the egg, it is impossible to say which came first.

Conclusion: Good didactics does not require that one should first acquire the knowledge to be able to put it into practice later, but it tries as far as possible to combine the acquisition of knowledge with action, to link theory with practice by creating situations which encourage a close link between the acquisition of knowledge and its application. It distinguishes between knowledge and skills and between explicit and implicit knowledge, which it also uses.

This of course does not rule out the presence of many skills that do not have any direct and immediate relationship to the action and experience, but that need to be taught nonetheless.

3.2 Argument 2: Life, school and situations

Instructing and teaching, learning and acquiring knowledge are activities that have shaped our culture for thousands of years. The school as an institution, as we know it today, is, however, a product of modern Europe. And the modern school has separated learning from life. It is necessary to bring life and learning together again.

Life and the school. Until its final triumph in the nineteenth century, school was the school of life, and most people learned through everyday experiences in the family, in the fields, in workshops and through constant exchanges. Learning meant observing, emulating and discovering secrets. The few schools that existed were reserved for the privileged, and the artisans – who were also a kind of elite – learned their trade first from the foreman, and those who still wanted to learn laboured for a few years in the workshops of Europe.

The medieval structures disappeared due to the political revolution that led to the modern state and the industrial revolution, which strengthened the capitalist system. The trade shops and the guilds were replaced by the institutionalised and mandatory public (or private) school. This led to a radical separation of school and daily life. The instruction and learning disappeared definitively from the everyday world and were allocated to a separate "artificial and protected" world, with its own customs and rules, which we describe as the "school logic". It is obvious that this state of affairs has a certain ambiguity: the school is expected to prepare youngsters for life, but it must do so in a context that lies outside of everyday life – completely in contrast to the phenomenon of growing into a profession, as was the case previously in the artisans workshops or in the community. And it does not stop there: today there is a further development characterised by the possibilities brought by new technologies, which challenges the school as an institution and generally blurs the dividing line between the real and the virtual.

But let us go back to the historical context, without thinking too much about the future. By the end of the nineteenth century, the modern classroom, perhaps with 50-70 students, was a place of discipline, where it was a simple matter of practising the skills of reading, writing and calculating, and in a dry manner, because of books that had little to do with everyday life and that were sometimes even written in Latin. Then, thanks to the scientific contributions of pedagogy and psychology and the improved training of teachers, efforts were stepped up to bring the school closer to life. "Non scholae sed vitae discimus!" We do not learn for the school, but for life.[10] The

[10] The saying of Seneca is not without irony – in reality vice versa: "Non vitae sed scholae discimus".

school became "active" again, and it did not confine itself to theoretical knowledge, but rather it tried to get closer to "practical" life, authentic experiences and adventures. And we, the teachers, have been asking ourselves the following question for over a century: *How can we bring the school closer to life?* Or, to put it the other way round: *How can we bring life into the classroom?* There are innumerable pedagogical theories, models and experiments that have addressed these questions and the reports on them could fill entire libraries. With regard to vocational training in Switzerland, there is a lot to say; but we can assume that Switzerland enjoys many privileges in this respect, as it is in close contact with the professional practice due to its system and considering its three centres of learning.

We all agree that we should not trivialise the matter. It would be naive to believe that it is enough to look for authentic experiences or current events in the real world and to bring them into the classroom in some way. There is a risk here! Those who have observed how some of the forthcoming didactics have also been promoted in vocational schools using attractive keywords like "experience",

"authentic" and "current", with the promise of easy solutions, are aware of this risk. It requires a rather systematic approach to reality and to experience, and the difficulties and limitations must be noted. Against this background, the concept of *situation* provides a valuable tool for the targeted observation, reading, selection and description of excerpts from reality in order to make them usable in school, based on a didactic handling process.

Conclusion: Good didactics tries to transcend the limits of school as an institution and to implement the guideline, "We do not learn for the school, but for life". In vocational training this is made easy by the fact that the professional situations are close at hand. Didactics has to adapt to these situations so as to bring them into the classroom and to convert them into learning opportunities.

3.3 Argument 3: Experience, reflection, learning and situations

To learn, we have to think and reflect, the best way being in direct relation to one's own experience in real situations.

We know that to be the case in the school, and many teachers are of the view that we have discussed in argument 1: the theory comes first and then the practical, and one has to acquire the theory first before implementing it practically. The school as an institution has certain claims and its own logic. It is a kind of knowledge agency, and therefore, to a certain extent, it has had to justify the primacy of theory before practice. Put very simply, the school has come to terms with this separation between theory inside and practice outside. We as teachers often share this principle and reinforce it through our work.

But if we are to take the two previous arguments seriously, we need to have the courage to review this logic and to adapt it in particular to the needs of reality-based learning and teaching in vocational training, i.e. the fact that we learn by doing (preferably) and act while learning. The key terms here are *experience* and *reflection*.

Experience. Let us start with experience. Through action, we continue to gain new experiences in constantly changing situations. Our experience, to a certain extent, is made up of "having acted" in many different life situations, and we can become experts through numerous and diverse experiences. The word *expert* comes from the Latin word *experiri* (from the Greek *peira* – trial, test), i.e. to try, to implement, to experience. Consequently, experts are those who have gained the experience. They have not only acted but have reviewed their experiences, have drawn conclusions from them, have continuously improved their actions and have always adapted to new situations. In other words, an expert is one who has faced many situations and learned from the experience.

Reflection. Experience is thus the object of our reflection. Reflecting has to do with thinking and considering, with mental debate, with our actions and our experience. It is something that we do daily, more or less intensively. But what do we do when we think and reflect? We accept the help of etymology once again: the Latin *reflectere* means to turn, fold or turn around. The meaning is perhaps clearer if we think of how the mirror reflects or throws back our image each morning. We may like this image, we may be satisfied with it, or it may depress us and cause concern, and we are glad to allow it to disappear from short-term memory, especially if we are no longer very young. Is that not so? Or we can "process" it, by *reflecting*, perhaps looking at the signs of a sleepless night or the signs of aging, and we ask ourselves the meaning of what we see. In order to *reflect*, we need to ask ourselves *questions* about what we perceive. The questions help us to *process* what we perceive, that is, when taking apart and putting together the individual elements and impressions, when isolating parts, when re-classifying the parts into the whole and when *analysing* our experiences in life. If we do not ask ourselves any questions and do not reflect, there is a risk that we will only reproduce what we already know and are able to do, which means standing still and not learning any further. Our reflection on what happens to us is a kind of interpretation of our actions and thoughts, which is thus a key step for learning. However, we have to learn to ask the right questions, which is not easy and has to be systematically practised.

It must be clearly stated that not all learning requires explaining and reflecting;[11] we can and must learn many things by doing and by forming a certain routine through repeated practice. In such cases, a Latin motto applies: *Repetitio est mater studiorum*. ("Repetition is the mother of learning"). However, if we want to take a step towards expertise, then the logical sequence is: Experience – reflection – learning – experience.

Let us not forget that the opportunities for direct experience are limited. More specifically, experience itself does not have any limits, but the experiences that a single individual can gain are limited. None of us can expect to gain all the experiences that we want to or to learn to do everything that we desire better. For this reason, experiences have to be shared and communicated to others,

i.e. *we have to learn based on the experience of others.* Wanting to learn everything through one's own experience is an illusion. To know what a lion is, I do not have to go to the Savannah myself nor to the zoo. Learning from the experiences of others means to

[11] It should also be noted that there are various forms of reflection, e.g. reflection in and during the action, reflection outside the action, reflection before the action as a planning stage, anticipatory reflection or a subsequent processing reflection.

have access to the collected knowledge that has been handed over in writing, which is easily accessible nowadays thanks to new technologies.

Conclusion: Good didactics wisely helps itself to experiences where this is possible and opportune. It takes into account the fact that one can learn not only from the direct experience of students but also from the experience of others. Learning from experience is a process that requires reflection and analysis, i.e. a systematic processing of what one has experienced in a situation. This happens by asking questions; asking the right questions has to be learned. Experts (or competent persons) are those who can learn from their own experiences.

3.4 Argument 4: Resources, competence and situations

We need resources to handle life situations appropriately and competently, i.e. knowledge and skills, but also the corresponding attitudes.

We have seen that, on the one hand, actions in everyday situations require knowledge and that, on the other hand, knowledge is a result of actions and reflecting on those actions. We have also seen that processing one's own experience leads to learning, although we cannot experience everything ourselves, and we therefore rely on the experiences of others, which are available to us in the form of written knowledge that has been handed down.

What can we do to make the learning process more lively and meaningful? As far as possible, we can refer to the situations that seem important and representative of life, and we can do so in a direct manner wherever possible, or even in an indirect manner where gaining direct experience is not possible or not realistic.

Situations. Our (living) world is made up of situations that can be assigned to different areas: to the professional and non-professional, the private and public areas. Figure 1 shows at least three types of situations:

- A: Situations in non-professional everyday life (e.g. going to a restaurant with one's husband or wife, raising children, going to vote)
- C: Professional situations (e.g. having lunch in the company canteen with colleagues, doing various work activities)
- B: Transition situations (e.g. attending a company event with one's husband or wife, explaining one's work to an acquaintance)

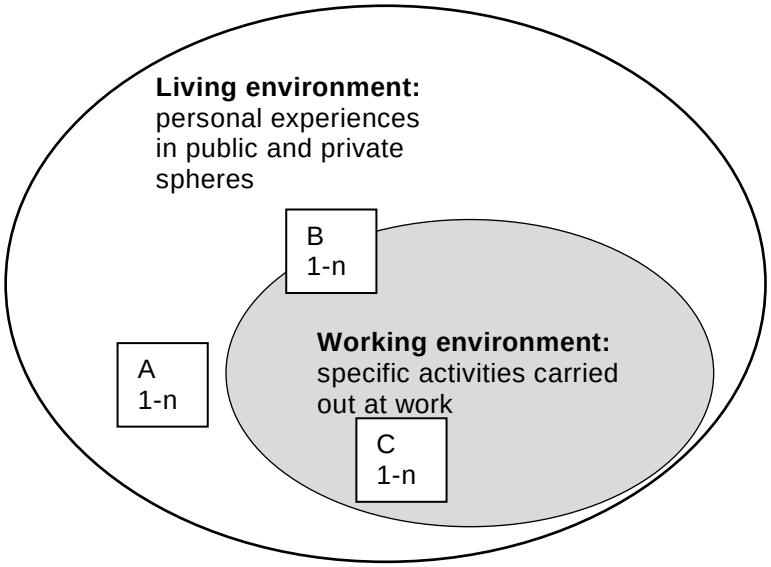

Figure 1: Life situations

The first example shows that some situations, in various forms, can occur in all three areas. But what exactly do we understand by the term *situation* (see also note 2)? We often use the word 'situation': we speak about difficult, hopeless, challenging, unpredictable or pleasant situations, about professional, financial and private situations. People might have a situation under control or they might lose control of it, etc. There are hardly any areas in life where we do not talk about situations.

Etymologically speaking, the word comes from *situ*, which refers to a place or a position, but also to a whole complex set of circumstances, mostly in an idle state. To summarise, we can define 'situation' as a structured unit of life, in which people act, that is, carry out meaningful, purposeful actions. A situation is characterised, on the one hand, by objective circumstances such as time and place, and material and social circumstances; and, on the other hand, by subjective circumstances, i.e. it depends on the state of the person acting in them. The *structure* of a situation is thus determined by at least the following elements:

- the (objective and subjective) contextual factors
- the players (actors)
- the actions carried out
- the standards (rules).

Resources. The situation of a football game usually occurs in the context of defined locational and temporal circumstances, and it involves players who are divided into two teams and who are trying to score goals, according to certain rules, against the opposing team. The main purpose of the game is (predominantly) the entertainment of the player himself and of the spectators. The football players need a rather complex set of *resources*, including the following:

- Declarative Knowledge
  the rules of the game, the opposing team and their way of playing, etc.
- Skills
  an overview of the game, dominating the ball with the foot, remaining physically fit for the entire duration of the game, etc.
- Attitudes
  motivation and aggression, team spirit, etc.

If the players have these resources, individually and as a team, then they have a realistic chance of winning games. If they do so, we can consider the team as good or, in other words, as an *experienced* and *competent* team. If the team does not win, we can at best consider it as a team with potential that is not being converted, that is, the team is not very competent.

Competence. With this example, we have introduced the concept of resources, as well as that of competence (see also note 3). We can hence summarise that the *resources* are the declarative *knowledge, skills* and *attitudes* that enable us to deal with life situations successfully. *Competence* is shown if it is possible to combine and use such resources specifically (and creatively) in a situation. Going back to the example again: if the team wins, then their competence level is high, if they only play for a draw, then their competence level is rather mediocre.

competence is therefore something complex. It cannot be attributed to a single resource, such as a single ability: controlling the ball is not a matter of expertise knowledge for football players; it is just one of many resources.

If we consider the knowledge ("savoir"), skills ("savoir faire") and attitudes ("savoir être") that we have to/want to teach in the classroom as resources that are required to deal with life situations, then we have a good argument in favour of broaching these situations in the classroom, directly or indirectly.

Conclusion: The objective of good didactics is to teach resources that are used for dealing with life situations competently. In this regard, it is competence-based. However, as we know, there are many resources that cannot be directly linked with situations that are experienced personally and that cannot be directly "translated" into skills. The students – later as professionals and citizens – have to establish this link by themselves. Good didactics therefore does not rigidly hold on to the absolute competence orientation, because competence can only be formed in situations as experienced. School is a suitable place for acquiring resources; life is suitable for forming and implementing competences as a whole.

3.5 Argument 5: Educational regulations, curriculum and situations

Education regulations and curricula are the control tools of schools and represent binding guidelines for teaching. Some of these relate to life situations, others do not. But even the latter are compatible with SiD.

Many new programmes and curricula have been produced in the past few years. This is not surprising in itself: programmes are important control tools for the school and, at times of profound radical change, otherwise routine revisions quickly become extensive and numerous. Not only is the increased speed with which the programmes are updated important; the form, the structure and the content of the new programmes and curricula require our attention as teachers.

Education regulations and curricula. In the last few decades, we in the educational field of framework programmes – which contain minimal details on topics and the content to be taught, giving the teachers considerable room for discretion – have devised increasingly detailed programmes which mainly require verifiable learning objectives. This also applies to the field of vocational training, where the so-called *regulations* of the various professions have been replaced by a twin steering tool: the *education regulations* and the *curricula*. The national curricula are additionally converted to regional or school programmes and supplemented with guides and various teaching materials, resulting in a considerable pedagogical administrative "setup". These developments have far-reaching consequences, which we cannot discuss at this point. For now, let us briefly look at the logic and structure of the education regulations and curricula that have been written following implementation of the Federal Vocational and Professional Education and Training Act in 2004. The education regulations are a normative tool that should be valid over the long term. They roughly define, in the form of competences, the characteristics of a professional profile (or a baccalaureate degree) and what should be taught, as well as describing the qualifications process. The curricula, which are easier to modify and adapt, list the educational content in more detailed form, they define what should be learned at the three centres of learning (vocational school, external courses and training institute) in order to acquire the necessary professional competences, and they specify the didactic approaches on which the teaching should be based.

But how do the education regulations and the curricula come about? They are based on one of two models that relate to two different basic ideas, but both have the same objective of promoting the development of competences. The first, on which most of the educational regulations and curricula are based, is called the **TRIPLEX** model. According to this model, the learning targets are formulated at three levels: main targets, indicative targets and performance targets. The process is deductive: the indicative targets are defined on the basis of the main targets, and the performance targets, the so-called "operationalised targets", which are embedded in a taxonomy (from simple to complex targets)[12], are based on the indicative targets. The number of performance targets varies from one profession to another, but in general there are several hundred (more than 500).

The second model is called the **CoRe** (**Co**mpetences and **Re**sources) model. In curricula that are based on this model, the important and meaningful situations requiring action in a profession are identified first. These are then analysed in terms of the main resources that

[12] See, for example, Bloom's taxonomy, which is used in many curricula.

are required for dealing with them successfully (competently). This usually leads to curricula that cover 40 to 60 situations requiring action. Important resources that are required for successfully coping are listed for each situation, divided into knowledge, skills and attitudes.[13]

The curricula that have been designed based on the CoRe approach use professional (partly also non-professional) situations as the basis and reference point for all three centres of learning. These curricula provide a concrete basis for SiD and thus facilitate its implementation. One can, for example, ascertain when a professional situation comes up in the training institute and thus coordinate its thematisation at the other two centres of learning. Although the resources represent learning targets, they are formulated not on the basis of performance targets but as learning content, and the teachers get more freedom for designing their classroom session. When formulating curricula based on CoRe, we talk about *target resources*.

The question of compatibility with SiD therefore comes up only in curricula that have been defined based on the TRIPLEX method and that do not have any specific references to professional situations (or life situations). The answer is a clear 'yes' but, as teachers, we have to assume a certain autonomy in designing the classroom session and we need to carry out some additional steps. Specifically, we must ensure that these learning targets are met with SiD – but, since the learning targets relate to the same professional reality from which the didactic situations originate, this is relatively easy to accomplish, as shown by the following table.

Situation	Performance targets based on TRIPLEX
Situation 1	Learning targets x-n
Situation 2	Learning targets x-n
Situation n	Learning targets n-n

Table 2: Equivalent situations - performance targets

The performance targets of the TRIPLEX curricula are numbered, which makes the definition of equivalence easy at the formal level. At the content level, one can basically assume that there will not be any problems in ensuring that the performance targets are met by using a good classroom session based on SiD. In some cases it may still be necessary to work in a targeted way on certain specific performance targets, which are often required for the centralised examinations but which cannot simply be assigned to specific professional situations. That may be the case, for example, in applied mathematics, where the requirements are often quite formal, and the assignments do not have much to do with professional situations. In such cases, we as teachers effectively have to serve two masters. On the one hand, we must consider the requirements of real professional life; on the other hand, we must also consider those of the school and the academic qualification process. The students have the right to ask for support at both levels.

[13] The CoRe model was designed as a tool for the development of curricula and training plans. Its main characteristics are: a) the idea of starting from real (professional or non-professional) situations, b) the question of resources (knowledge, skills and attitudes) which are necessary or helpful to deal with situations successfully, c) curricula relating to the defined competences and resources, d) a didactic approach that uses real situations as the main reference point for teaching and learning, and e) the idea that there is a cycle which starts from the analysis of real situations and leads to the design of didactic situations by teachers. (see Ghisla et al. 2008)

Conclusion. Good professional didactics relates to important situations in professional life and sometimes also in non-professional contexts. If the curricula are already defined based on situations, the implementation of this approach is easier; otherwise, correlations will have to be established between the performance targets of the programmes and the professional situations being discussed.

3.6 Argument 6: Teaching, learning, content, methods and situations

Teaching and learning are complex processes relating to learning objects (the what) and to which methods are used (the how). Teachers and students have to come together, and situations can assume the role of mediator.

Teachers and students need to meet, and their performances need to come together. Otherwise, there will not be satisfactory results. The teacher may have the feeling of having done their duty, but they do not get any confirmation of this and will tend to attributable any failure to the student; the students, on the other hand, will show their frustration more or less openly, will soon be demotivated and will eventually have to face the consequences.

Teachers have to work professionally and competently at all times; it is their responsibility to create the best conditions to ensure that the students can learn. *Situations, real or didactic*, can play the role of a mediator within these basic teaching dynamics. Teacher and students can come together in the situations because both sides can relate to them, and because they give a meaning to learning. But for this to be possible, we teachers must use situations and also design our lessons appropriately, considering a variety of factors. The most important factor is undoubtedly the students themselves. As teachers, we have to know them, with their qualities and characteristics as individual adolescents or adults. At this point, we do not seek to go into depth on the topic of the characteristics of students, their learning strategies and behaviour, but we will list some considerations using other keywords: learning content, routine, instruction, method, rules and discipline – factors that we consider important so that the situations can fulfil their mediatory role in SiD and can facilitate a constructive meeting between teacher and students.

Learning contents. Teaching is a purposeful plan, which has the intention of achieving results. This dimension of teaching is directly or indirectly based on a change that has taken place in recent decades in terms of curricula. As we have seen, the old programmes (for example the so-called professional regulations), which summarily listed the contents to be taught, were largely replaced by curricula with so-called "operationalised learning targets". Some of these curricula lead to more than 500 performance targets, with all the consequences that they can have. Now, without contesting the need for learning targets, we as teachers should be aware that we are not working with targets but with content,

i.e. with *What* we want to teach and what we expect from the students. In this sense, target achievement is a *quality* of the content, but the targets as such are not the content.[14] We are

[14] Expressed differently, the fact that content can be considered as targets is a specific property of the content itself, but targets are not content by themselves.

confronted here with a widespread and consequential misunderstanding, because learning targets have sometimes attained an obsessive presence that may significantly distract us from the real challenge: that of teaching and learning content, namely knowledge, as well as skills and attitudes. Robert Walser, a leading Swiss writer, reminded us: "The targets are most likely to be found if you do not think about them." And that brings us to postulate the priority of content. In other words, once we take note of the targets, we should focus on the content, i.e. on the resources that are necessary in life.

Routine. Most of the knowledge and skills that we have and that we use daily are implicit. We have acquired them once, and they have embedded themselves in our memory due to repeated actions, intuition and practice, spontaneously and instinctively rather than through conscious learning. They have become part of our experience and our habits, and we use them routinely and mostly unconsciously, with confidence and without much effort. Routine (from French *route*, path, road) not only shows us the way in our habitual actions, but it also allows us to tread this path confidently and calmly (see also the keyword "recipes"). From a didactic point of view, there is a twin interest in routine. First, it is important for the students to get into a routine, i.e. well-established and practically effective abilities and skills (cognitive, practical/motor, etc.). Secondly, they should also achieve a routine with regard to learning.

As teachers, we should have no hesitation in using the many activities and exercises that encourage learning and memorisation, albeit in a selective manner, i.e. without deteriorating into a teaching style that relies too much on repetitive and mechanical practice. The core of teaching and learning is still reflection and understanding, based on the ability to ask questions – but at the same time we should not forget that there are moments in all life situations that can be handled better using the routine acquired through practice and repetition.

Recipes (and procedures). In recent decades, *recipes* in pedagogy and in school have not had it easy. In fact, they have been pretty well discredited, and not without reason. They should be more or less thrown overboard in favour of a dynamic and lively teaching method, to be implemented by creative and critical-minded teachers. Schematic, standardised or excessively prescriptive instructions, i.e. *recipes*, have been frowned upon as being symbolic of teachers who act mechanically and according to specifications, which can hardly suit the realities of a classroom and the individual needs of every student. However, the recipe cannot be declared dead just yet, and thus there is currently a shortage neither of "didactic recipe books" nor of methods or application suggestions for "material packages", which more or less include the traditional recipes once again (see keyword "methods").

Naturally, one has to agree with the criticism of an overly prescriptive and restrictive didactics. Ultimately, teachers should not let themselves simply be degraded into implementing units of prescriptive specifications. A recipe that is based on didactic practices but that falls short can be understood to correspond to the practice in medicine where something is prescribed that is correct *by definition* and is not questionable. A look at the culinary world shows us that recipes there have other intentions – and they may also have a better reputation. Every good cook writes and uses recipes. As in all professions, including the teaching profession, a considerable part of the work, even for the cook, consists of routine activities, which need to be carried out in a systematic and structured manner. Thus the meaning of the term *recipe* expands and may also include *procedure* or *approach*. To define a procedure as a form of action and behaviour, which may lead to an intended result under certain conditions, goes very well with the teaching

profession, in our opinion. Recipes and approaches prove to be sources of certainty and repose, especially in moments of stress, which are present even in our profession. Anyone who can use a recipe well and intelligently can also creatively adapt himself/herself to changing conditions and needs, thus improving his/her expertise.

Methods (and techniques). This brings us to didactic methods, which are enjoying excellent health. They are being met with much interest, not least because their supply and availability have greatly increased thanks to new technologies and market expansion. These methods are undoubtedly meeting the real needs of teachers, although this may also be the consequence of a certain disorientation and uncertainty. However, the methods also provoke many questions. Let us begin by clarifying the meaning of the term. *Method* represents an action and an approach based on a particular arrangement when pursuing a target (the Greek *metodos* comprises the words *meta,* target, and *odos*, path – hence, the path to the target). In didactics, the term has retained the connotation of *systematic* in a self-contained approach according to regulation. A method describes a relatively fixed number of procedural steps that follow a certain logic and that must be followed, otherwise the meaning and effectiveness are likely to be lost. Thus, there is a *Montessori method* used with children, the *communicative method* in teaching foreign languages, the *Dimat method* for mathematics, etc.

In addition to the concept of method, there is also that of the *didactic approach*, which allows for more openness and flexibility. We would assign this concept to something like *project work* or even to *SiD* itself. Finally, there are (didactic) *techniques*, which relate more to certain teaching tools. We know about techniques such as frontal classroom teaching or the classroom discussion, group assignments or workshop sessions, etc. Numerous "brands" and abbreviations are also found in the didactic market, mostly in English, such as TBL (*task-based learning*), *problem solving* or PBL (*problem-based learning*), *blended learning* (for a mix of classroom and online learning), *and webquest* (for research assignments on the internet), etc.

This large offering of methods, didactic approaches and techniques brings us to a second problematic point: since quantity does not necessarily imply quality, we need to be cautious when choosing. This leads us to a third problem: where there is a certain degree of uncertainty, the ground is very favourable for dogmatism. As teachers, we should not underestimate this problem, and we should assume a basic attitude that is particularly critical of any kind of methodological absolutism. A guiding framework which provides indications and criteria for evaluating and selecting methods and techniques may be helpful in this regard. SiD can meet such a requirement, especially since it provides a framework which, depending on the subject and the context, includes the prerequisites of a reasonable or functional selection.

Coherence. Learning is synonymous with orderliness. Primarily, orderliness is required at the level of knowledge and concepts, because orderliness is ultimately indispensable even in a wider organisational and disciplinary sense in the cognitive domain of thought. A lack of orderliness and organisation is certainly not a good condition for motivating and effective learning. Orderliness has a lot to do with coherence and with consistency in thought and action. Therefore, while we do not advocate a blind frenzy of regulations and strictness, precision, structure and reliability are required.

One could go further afield, because both cognitive (in relation to cognitive and learning processes and to mental abilities) and social aspects (in relation to attitudes and behaviours) are

also in play here, but we shall restrict ourselves to one example which can be used to illustrate both these aspects, referring to the specific requirements of everyday practice.

Textbooks are not used for many subjects in vocational training. Students are given a wide variety of materials instead: worksheets, text extracts, documents, etc., which should normally be filed in folders. When we look at the result, however, we are frequently disappointed. Frequently, such folders – if they exist at all – convey sheer confusion, sometimes even chaos. The collections of sheets are sloppy and neglected, they can be hardly considered a worthy result of serious work, and they do not represent a useful basis for the learning process. Furthermore, these sheets are rarely identifiable, for example by date or using a note of the subject or learning module to which they belong. The fact that youngsters are not orderly in general is well known, and the prevalent culture today is indeed not very conducive in this regard. Therefore, it makes complete sense for teachers to support the youngsters in organising and structuring not only their documents but, in particular, their thoughts and actions.

SiD does not have an easy answer to this problem, but it does provide good conditions for developing the sense of an orderly and systematic approach. Situations have to be defined and represented, and they require analysis and synthesis work. It is impossible to pinpoint them without the necessary systematic coherence and systematics. This naturally means that SiD carries some risk in itself, simply because it demands a more orderly and disciplined approach compared with "conventional" teaching.

Conclusion: Good teaching and learning are affected by many factors. It can be very important to take *real-life situations* as a starting point and to convert them to *didactic situations*, because this favours the coming together of teachers and students, especially in vocational training. At the didactic level, one has to

- proceed coherently and systematically when designing the classroom session, but also in relation to the expectations from students;
- be critical about the methodological flow and the didactic techniques, and ensure the functionality of the resources used;
- apply recipes and procedures, but not without a critical/reflexive attitude that may help in adapting them;
- promote learning using knowledge and understanding, while not forgetting that knowledge and skills can also be acquired by memorisation, practice and repetition.

Finally, it should be highlighted that good didactics does not become monopolised by the learning targets – content is just as relevant in teaching, as well as in learning.

4 SITUATIONAL DIDACTICS: DIDACTIC TRANSPOSITION, SCENARIOS, VIRTUOUS CYCLE AND DIDACTIC PHASES

The examples in chapter 2 clearly show that SiD is supported by two pillars: real situations and didactic situations. To bring reality into the school in a meaningful way and to make situations useful for learning implies the building of bridges between these two pillars – between school and life. This has to be done in a selective and thoughtful manner and not at any cost. SiD provides a reference framework for the meaningful implementation of various didactical activities. A sketch of *classroom grammar* can be prepared on the basis of these conditions – to pick up the metaphor introduced initially – and can present the main elements of SiD.

SiD

1. considers the *transposition* of **real situations** into **didactic situations** as fundamental
2. assigns an important role to the implementation of **didactic scenarios**
3. considers that teaching and learning take place through a positively reinforcing didactic cycle – the **virtuous didactic cycle**
4. defines different **phases** of a didactic scenario, especially the phases of a) **preparation**, b) **analytical reflection,** c) **synthetic reflection** and d) **evaluation**.

4.1 Transposition and didactic scenarios

Learning can take place both in the context of real life, e.g. in daily professional practice, and in the context of school, where a didactic relationship develops (see Figure 2). One can learn with or without any relation to situations in school. Thus, we can have a classroom session that we call "traditional", which does not establish any systematic relationships with life situations, although it does not rule them out. A direct or indirect relationship to real situations is a necessary condition with SiD. Teaching and learning thus acquire a *situational* nature, i.e. although they mainly take place in *didactic situations*, they have a strong relationship to *real situations*.

Everyday life – professional as well as non-professional life – consists of a complex mix of activities, actions, skills, behaviours, explicit and implicit rules, roles, values, etc. To make everyday life available for teaching is not easy. Therefore, the term *situation* is so valuable. It helps us to narrow down the complexity of the reality of everyday life and to compile it into modules, which may be relevant for didactic activity. Didactic situations can be embedded in this.

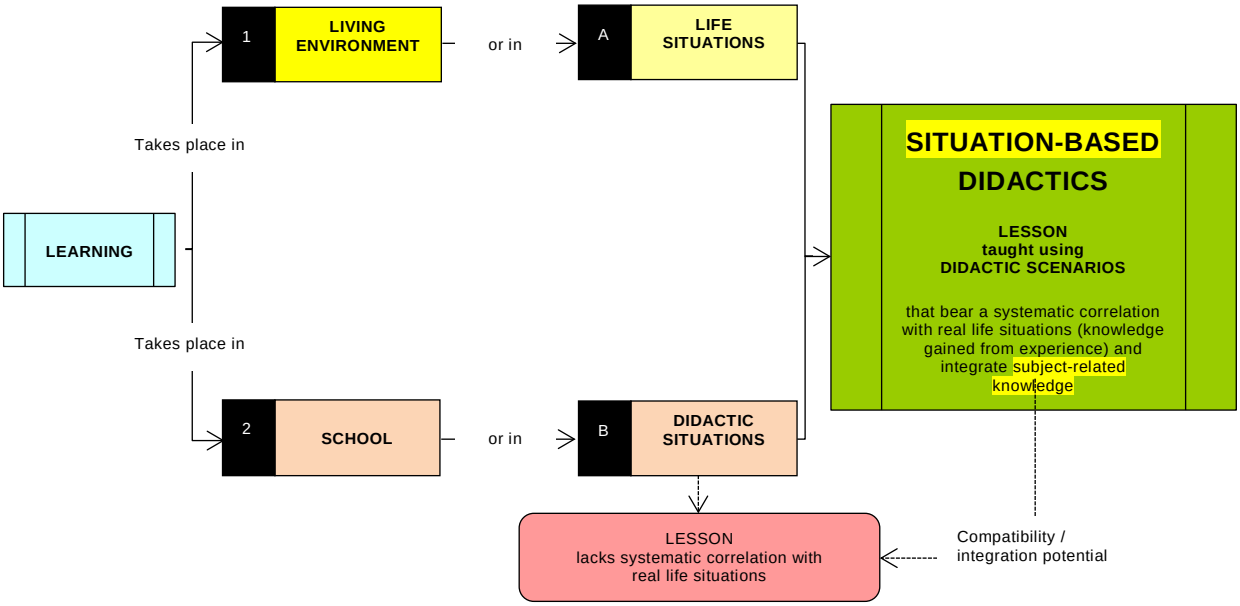

Figure 2: SiD: Learning and situations

This embedding is direct if the *real situation* can be reproduced, and if we succeed in *staging* it using people who know about such situations or have experienced them; the embedding is indirect if we use *exemplary situations taught using media* (simulations, typical case studies, accounts by participants, film clips, etc.). There are two forms of *didactic transposition*. There is a kind of continuum here, from a situation based on personal experience that is reproduced to a situation based on others' experience that is shared to the corresponding didactic scenarios (see Figure 3).

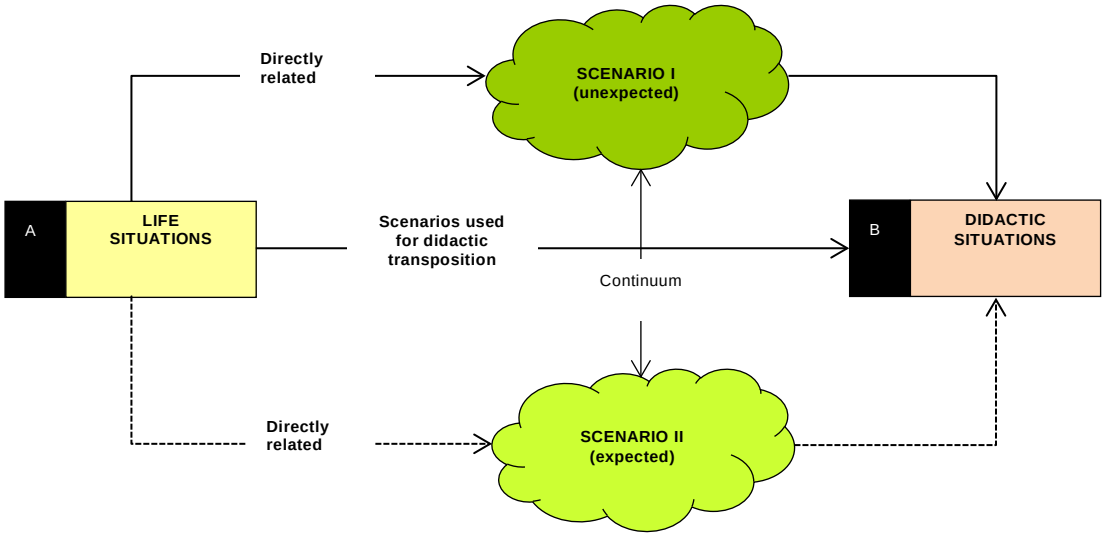

Figure 3: SiD: Learning and didactic scenarios

By using the word *continuum,* we emphasise that we are not describing two contrasting didactic methods. Rather, there are different forms and combinations of scenarios between the two poles, which depend on the respective circumstances. The design depends on what answers the teachers can give to the two following basic but challenging questions: "What real reference situation should I select to embed the didactic activity in?" and "How do I manage the transposition of the real situation into the didactic situation?"

We will address these questions in detail in Chapter 5. At this point, two important conditions need to be mentioned. The first is that the teacher should have adequate knowledge of the real reference situations, especially the professional situations. For example, the English teacher who is teaching system technicians in biochemical laboratories cannot avoid dealing with the corresponding professional environment. The second condition relates to educational regulations and curricula. These naturally represent the normative basis for planning the classroom session. If competence profiles and learning targets according to these normative fundamentals are based on the analysis of professional situations, then it is naturally easier for the teacher to implement SiD. But SiD is not bound to curricula. Although it is based on the TRIPLEX model, for example, the teacher can identify important and representative situations and can link them appropriately with the curricula, thus complying with the normative specifications.

4.2 The virtuous cycle of didactics

The relationship to situations in real life is the first important step to activate a *virtuous cycle* in the didactic process, a cycle which starts from practice and ends in practice. Didactically, it does not simply cover the passage from theory to practice and from practice back to theory in one operation; rather, it starts from practice and ends in practice. Something that sounds so abstract requires explanation (see Figure 4).

Practice takes place in life situations. The knowledge and skills of those directly affected are derived from experiences, and this constitutes the first important basis for the learning process. The second basis, which is equally important, is the knowledge gained from the experience of others, i.e. their expertise. These two types of knowledge come together in a process that we call *reflexive processing*, which initiates the **inner** cycle of *Practice-Theory-Practice*. Practice and theory, experience and reflection come together in this cycle through an integrated process, which requires analytical tools as well as tools for synthesis. The result of the process corresponds to acquiring knowledge and skills that enable the student to close the **outer** cycle and to return to life situations.

Didactics designed in this manner can help to bridge the gap between knowledge and the contexts of its usage – the gaps between theory and practice, between individual disciplines and professional activity and between the different centres of vocational training (training institute, external courses, school). A *virtuous cycle* can thus be set in motion, whose beginnings are preferably real situations. If possible, these situations are converted into didactic activities in an appropriate manner. The resources to master them can then be successfully acquired and consolidated.

'Appropriate' means at least three things in this case. First, appropriate life situations have to be identified and selected; secondly, these situations have to be converted into the learning pro-

cess (classroom, workshop, etc.) in an appropriate manner; thirdly, comprehensive *reflexive processing* is required.

As already implied, the *virtuous cycle* preferably begins with experience from life situations, but referral to expertise cannot be ruled out, as shown in Figure 4. Thus SiD creates conditions that can be pictorially imagined as a surface on which a cursor can be operated: the movements go from experiential knowledge to expertise, from practice to theory, etc. When docking, the relevant meaningful knowledge is taken along. We can once again use the metaphor of the guests in the classroom: experiential knowledge and expertise are present and provide information, provided it is used sensibly and intelligently.

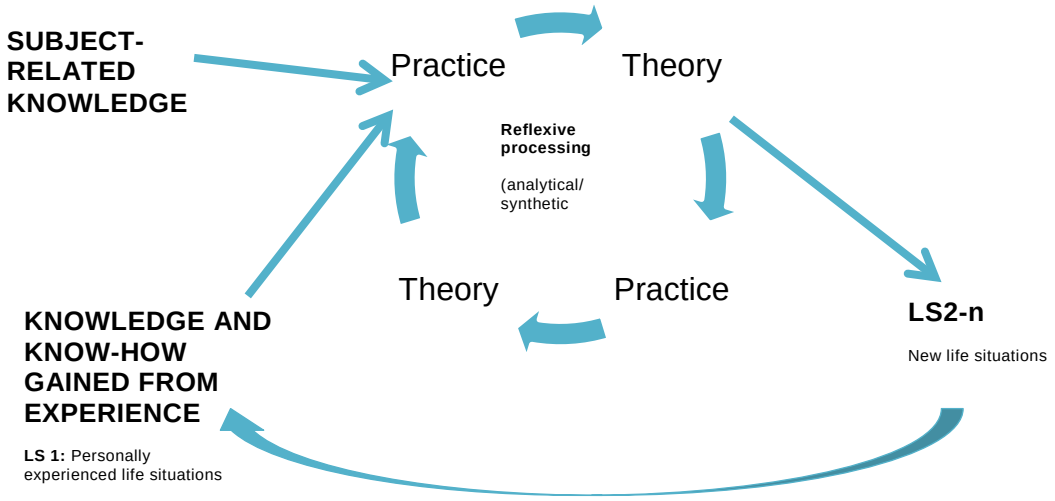

Figure 4: The virtuous cycle of SiD

The reflexive debate with the situations, in their two main forms of analytical and synthetic processing, is assigned a central role in the cycle. In a strict sense, teaching and learning take place in the internal cycle. The teacher and the students come together in the didactic environment. With naturally different roles, they analyse the real-life situation and form a learning synthesis by acquiring the resources (knowledge, skills and attitudes) that are necessary to deal with it. This mainly pertains to content.

Analysing implies dissecting a fact, a phenomenon or an event – in this case the real situation. *Dismantling* means identifying the individual elements in order to understand the properties, functionality, problems, challenges, etc. of the situation – but it also means identifying the gaps in knowledge that make it difficult to understand the situation better.

The term *synthesis* describes the act of (re)assembling or joining the necessary elements of knowledge and resources in order to a) understand the situation completely and b) develop an ability to act in it.

Specifically, the analysis provides two important results. The first is the *structure* of the situation, which is generally made up of the following factors:

- the action carried out
- the targets pursued through the action
- the conditions under which it is carried out

- the tools which are used
- the rules and standards that need to be followed
- the problems and challenges that have to be overcome.

The second result consists of a list of *resources*, using which one can successfully deal with the situation. These include:

- Knowledge ("savoir")
- Skills and abilities ("savoir faire")
- Attitudes ("savoir être")

Didactically, i.e. from the perspective of the learning process, it is advantageous if this analytical processing is done together with the students, naturally under the careful guidance of the teacher. Using this analysis, the students can grasp and understand the situation, and they become aware of the knowledge and skills that they lack in order to successfully deal with them in practice, i.e. to carry out a "reverse transfer" from the didactical situation to the real situation.

This completes the twin cycle. The first, outer cycle, goes from practice back to practice and enables the students to bring everyday or work situations to school and then return to the practice, equipped with the necessary resources to bring about the desired transfer. The second inner cycle enables one to develop a life situation, to proceed using theoretical knowledge and to clarify the situation. This is an important aspect, because the processing of the initially experienced situation will lead to cognitive learning, progressing to an inflow of (theoretical) knowledge. In other words, if we were to stop at analysing the experience, then learning would hardly be conceivable. From this perspective, the virtuous cycle becomes a place of understanding and exchange between teachers and students, between mutual interests and endeavours.

Next, we will present the idea of the virtuous cycle in the form of a process, which we have described as the *didactical scenario*.

5 SITUATION-BASED DIDACTICS: MACRO AND MICRO-PLANNING

When implementing the scenarios or didactic processes, the classroom session must first be planned with respect to how the intended targets need to be achieved. It should be noted that a didactic scenario represents a learning unit that generally covers several lessons and requires careful planning of the various teaching activities, so that they are coherent and balanced. The structuring of the didactic scenario into phases is a guideline. One could say that the phases represent the syntax of didactic grammar. These phases are illustrated below, with a distinction drawn between the macro and micro phases.

5.1 The four macro phases of SiD

The phases of SiD, in terms of general didactics, relate to four main activities of the work of teachers: 1) preparing for the classroom session, 2) analytical processing, 3) synthetic processing of the content discussed in the classroom and, finally, 4) summative performance assessment. The second and third phases (see Figure 5) are, so to speak, the heart of the teaching and learning process. The term *processing* indicates, as the *virtuous cycle of didactics* intends, a dialectical movement, in particular a reflexive debate with the contents, which enables the convergence of theory and practice. What happens concretely is an analytical processing, i.e. the breaking up of the real situation into its parts, which necessarily results in synthetic processing, i.e. a re-assembling of the parts, to a certain extent at a higher level, by including the knowledge that has been newly acquired through learning and practice. This is the innate vision of teaching and learning in SiD.

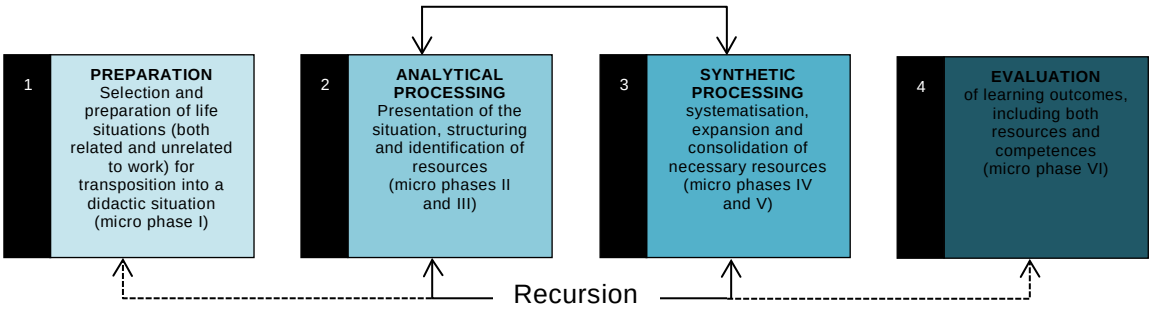

Figure 5: The macro phases of SiD

1. First macro phase: **Preparation**. For the teachers, this phase involves the selection of the important (real) life situations and the selection of the type of didactic transposition. (see micro phase I)

2. Second macro phase: **Analytical processing**. In the didactic situation, the life situation is initially presented. This will then be the subject of analysis (structuring and identification of resources – knowledge, skills, attitudes). (see micro phases II and III)

3. Third macro phase: **Synthetic processing**. Once the resources for understanding and dealing with the situation have been identified, it goes through a phase of synthetic processing in order to systematise and create a deeper understanding through theoretical inputs, lessons, exercises, etc. with regard to the (reverse) transfer to the real-life situation. (see micro phases IV and V)

4. Fourth macro phase: **Evaluation**. The last phase is dedicated to the summative evaluation of the learning results, in terms of both the individual resources (especially the knowledge) and the competences resulting from the interaction of the individual resources. (see micro phase VI)

We emphasise that the **sequence of phases** in this plan effectively represents an ideal condition and need not be strictly followed. This is also true for the micro phases (see next chapter) and in particular for the actual implementation in the classroom, that is, the analytical processing (micro phase II) and the synthetic processing (micro phase III). In other words: The four macro phases and the six micro stages should be present when implementing a didactic scenario, although their sequence may vary in practice.

Let us take an example. A brief written account is expected from students training as professional athletes regarding the competitions in which they are participating. The real situation that has to be dealt with, is thus "writing a report about the competitions." One may imagine that this starts with some students reporting about a competition in which they have participated, and that these reports lead to the analysis phase (What does a report contain? What resources are required to write a good report?) Then, there is the synthesis phase, with a theoretical input (syntactic rules, spelling, vocabulary, etc.). Finally, there are evaluation phases with exercises (writing reports, comparing and correcting). Didactically, it would be conceivable to start the process by writing other texts and then bringing in the situation of "Write a report on a competition" as a further application exercise in the consolidation phase.

5.2 The six micro phases of SiD

To show how the various phases are subdivided in a didactic scenario and how they interact with each other, we add two illustrations at this point.

First, a plan (Figure 6), which summarises the six micro phases and covers the following points for each phase:

- the definition of the phase
- the didactic question that it characterises
- the didactic options that are available, and finally
- the expected result.

Using a simple table (Table 3), we shall then show how the approach steps for the six examples discussed at the beginning of this guide (chapter 2) can be assigned to the six micro stages of SiD. Finally, we provide a detailed description of all the phases.

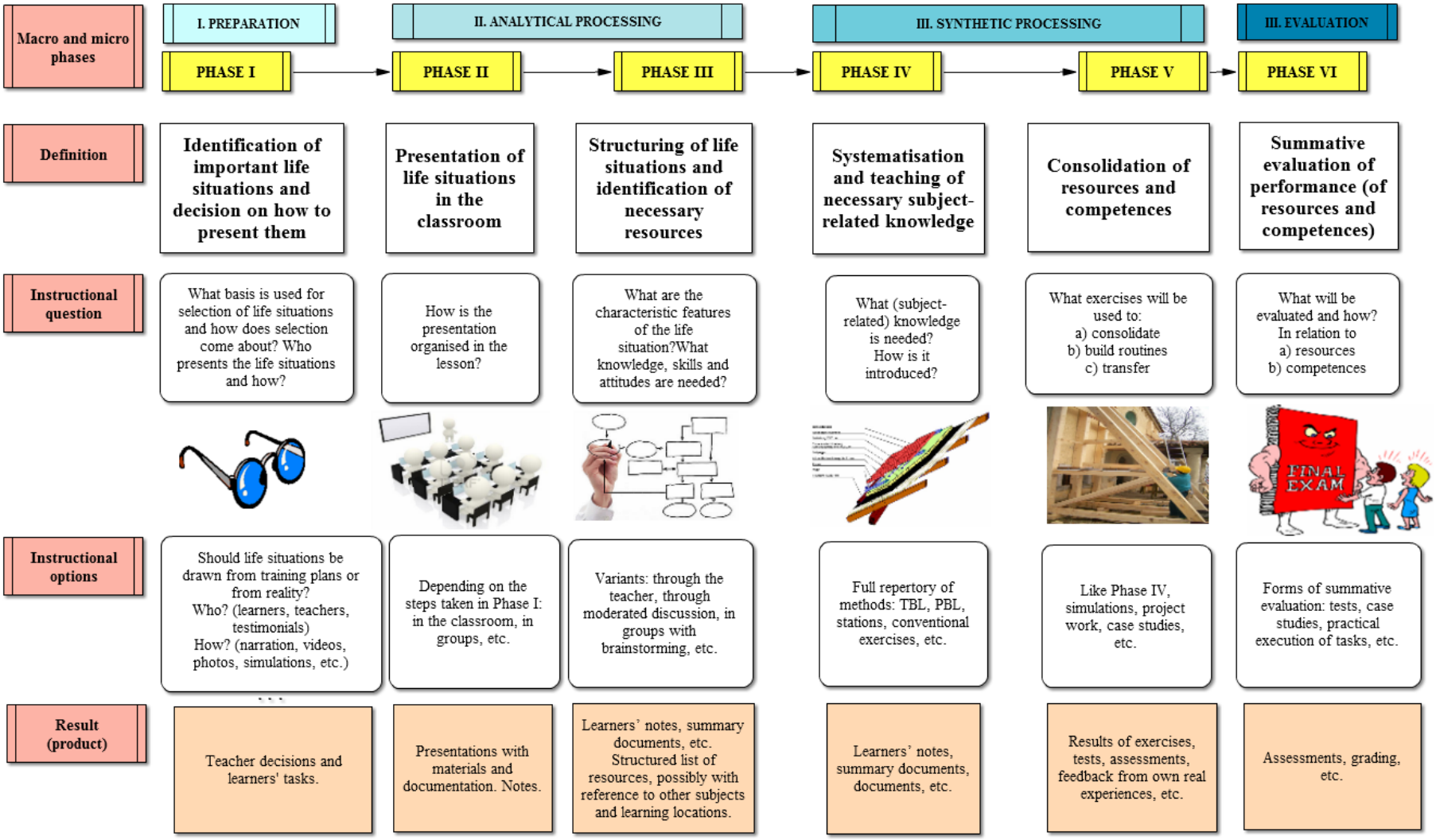

Figure 6: Micro phases of SiD

Situation	Phase I: Identifying	Phase II: Presenting	Phase III: Structuring	Phase IV: Systematising	Phase V: Consolidating	Phase VI: Evaluating
S I: English in chemical and biological laboratories	The teacher becomes familiar with the professional reality. Task: The students observe and document the processes in the laboratory.	Three students present their experiences.	Analysis of experiences and bringing them into a structure; list of resources with respect to English.	Classroom session on vocabulary and relevant linguistic structures.	Exercise on one laboratory process (film). Group work with presentation.	Learning assessment.
S II: Briefing discussion (3D designer)	Because the teachers know the situation well, they present it.	Simulation of a briefing discussion (with video clip if necessary).	Systematic analysis and classification of the situation.	Theoretical input. Preparation of ideas and sketches for the clients.	Second simulation briefing discussion with video clip.	Learning assessment.
S III: Blood pressure measurement	Situation of the curriculum. Task: Two students observe the process in their work environment.	Presentations of the two students	Analysis of experiences in groups, presentation and comparison of situations.	Theory session. Exact determination of resources.	Determining where you stand and feedback.	-
S IV: Height measurement	Practical activity at the construction site and in the curriculum. Task: Some students take photographs and make video clips.	Presentation by students; the teachers add to it.	Identification of measurement methods	Written summary.	Simulation with data collection outside the school area and consolidation in groups.	Individual exercise with learning assessment.
S V: Images and totalitarian regimes	Selecting an image as a source of information.	Presentation and discussion between students and teachers.	Identification of necessary resources.	Session on key terms	Exercises and formative evaluations.	Simulation and creation of a poster.
S VI: Sales discussion	Task: Some students have to film the consultation and sales discussion.	The participants see the video / film clips in small groups.	The teacher analyses the situation based on the clips and observations of the students.	Theoretical input on tools for conducting consultation and sales discussions.	Two consolidation activities: Simulation in the classroom and practical implementation during internship.	Describing an implementation example during internship and self-evaluation

Table 3: Examples of didactic scenarios and assigning them to the phases of SiD

5.2.1 Phase I: Identifying the situation and selecting the presentation method

The teacher has to find an answer to the following didactic questions:

- *How can I identify and select real and meaningful life situations (LSs) that can be introduced in the classroom as a starting point for the learning activities?*
- *Are such situations included in the official documents (educational regulations, curricula, manuals – e.g. in CoRe curricula) or is reference made indirectly to such situations (e.g. in TRIPLEX curricula)? Who can present a situation in the classroom and how?*

In this preparation phase, one has to look in two directions. This involves identifying important everyday situations from real professional or non-professional life, as well as taking preliminary considerations about the manner of introducing these situations in the classroom. The teacher takes important decisions in this phase, which affect the continuation of the didactic scenario.

When choosing an appropriate situation, there are two different approaches. The first comes from a curriculum that includes explicit professional situations where action is needed (see S III). One can use those situations that are usually part of a competence profile for the relevant profession, or even other documents compiled for implementing the curricula at individual schools. In the second case, if the curriculum does not explicitly refer to professional situations, then more commitment is required on the part of the teacher, who has to find out the professional (and non-professional) reality of the students, based on experience or by involving experts, as well as identifying and describing the important situations (see S I, II, IV, V).

Once the situations with which one wants to work are selected, we consider how to transfer them to the classroom. There are many possibilities here, and the choice mainly depends on whether the students experience the situation directly (e.g. in dual education and training) or not (as in case of full-time schooling). In any case, the didactic imagination of the teacher is required here (see implementation options in the examples). If the students experience the situation effectively and directly, the teacher can ask them to collect authentic materials (e.g. to document processes in business operations with pictures, to film oneself carrying out an activity or to document the key situations experienced during an internship). Such authentic materials can also be brought to the class by the teacher himself/herself or can be documented in the form of personal reports or testimonials.

Even situations that the participants do not know first-hand can be specifically recreated in the classroom, e.g. using role plays or presenting images or video material about similar situations.

Depending on the conditions, the teacher can decide to introduce one or more illustrations of the same important situation, using the same medium or different media. These decisions have to be taken considering the learning targets and learning content as well as the specific requirements in the study group.

5.2.2 Phases II and III: Presenting and structuring the situations

The following questions are addressed in analytical processing:

- *How can one present the real situation effectively?*
- *What are the characteristics of the situation? What are the targets and what actions are carried out, under what circumstances and using which tools?*
- *Which resources – knowledge, skills and attitudes – are necessary to deal with the situation competently and successfully?*

Phase II of *presenting* the situation in the classroom is mostly a logical consequence of the choice that one has made in phase I. It remains to decide which social form (plenary session, group activity or individual activity) and what tools should be used for the presentation. The teacher defines and organises the working method for the initial consolidation of the situation in the classroom or in small groups, as well as determining the form of exchange (questions, notes, reports from the groups, etc.)

The third phase of *structuring* the situation is the continuation of the analytical processing that was started in phase II. The aim is to systematise and to abstract from the real situations that are generally shaped by personal experiences and specific circumstances and to arrive at a *general description* of the situation that can remain valid beyond the individual experience. This is done first by trying to define more precisely the purpose or objective of the action carried out. The circumstances, and later the potential problems, risks and challenges, are also addressed. On this basis, one can proceed with defining the resources, i.e. knowledge, skills and attitudes that make it possible to deal with the situation successfully and competently. The resources can be identified using different techniques (*brainstorming*, classroom discussion, etc.) and social forms (plenary session, small groups, working with partners, individual assignments, etc.). The following simple scheme can be used to define the resources.

Title of situation		
Persons involved		
Actions		
Regulations. standards		
Necessary resources		
Declarative knowledge	Skills	Attitudes

Table 4: Scheme for describing a situation and the necessary resources

5.2.3 Phases IV and V: Systematisation and consolidation

For the analytical processing phase, the following didactic questions arise:

- *What knowledge, and especially what subject-related knowledge and specific skills are necessary in direct or indirect connection with the subject being taught? How can these be introduced?*
- *What exercises can help with the consolidation of knowledge and skills, with the formation of routine and finally with the transfer into practice and to new professional situations?*

The two phases of synthetic processing are very important in the classroom session, because the teacher introduces new knowledge here. Certainly, new findings have emerged in the previous phases and new skills have been developed, at least on the part of some students. But in the phases of systematisation and consolidation, the teacher has to ensure the actual qualitative leap in learning – the teacher has to ensure that the new elements of knowledge and other situation-relevant resources can be acquired by the students. This can be done in various ways, using appropriate techniques and methods – SiD supports almost the whole variety of methods.

Particular attention has to be paid to practical exercises, i.e. implementing activities, the consolidation of new knowledge and the acquisition of action and behaviour routines – all prerequisites for skills development and for the transfer to other contexts.

The activities and exercises of these two phases should lead to comprehensible and structured learning results, which could be said to represent the synthesis of the work on the didactic situation. This synthesis should be reflected both in the learning materials (notes, texts, handouts, work instructions, prototypes, etc.) and in the mental structures of the students. There is without doubt a clear relationship between the two levels, as has already been mentioned: if the materials are orderly and well structured, this increases the chances of successful learning.

5.2.4 Phase VI: Evaluation

The didactic question is:

- *How should the learning performance of students be assessed? How should the various resources and the resulting competences be weighted?*

Once the resources for the selected situation are expanded and systematised, the learning performance has to be assessed.

The teacher can use traditional methods of learning assessment (tests, theoretical exams etc.) in relation to the individual knowledge resources; but SiD also recommends an assessment at the competence level, i.e. assessing the implementation of learning results in a real or simulated situation. This can be done in professional practice if possible, or in situations which depict the reality, i.e. in simulations. The assessment in the situation, whichever way it is done, can involve returning to the preparatory phase (the teacher selects a similar situation) or to the synthetic processing phase, so as to develop individual resources further.

6 THE 13 CHALLENGES OF SITUATIONAL DIDACTICS

1. SiD seeks to provide answers to two needs:
   a. general, higher-level needs of the *pedagogical* kind
   b. specific, lower-level needs at the level of *subject didactics* or *professional field didactics*.

SiD is thus defined as *general didactics*, which assumes a *mediating role* between the *pedagogical discourse,* whose responsibility it is to clarify the meaning and purpose of education, and the *specific didactic discourse*, which is responsible for the specific design of teaching and learning.

2. SiD is based on the theory that *human action* – practical activity – always happens in *situations*. The term 'situation' is key to understanding the reality, because situations virtually build the framework for action and existence. On the one hand, we experience situations in personal, private or public life. On the other hand, we experience them at work and in professional life. The concept of *situation* is a tool for capturing and describing realities to which education and learning can relate.

3. SiD assumes that action in a situation requires *knowledge*, which the person either develops in the situation itself, where knowledge and action join together, or acquires it outside the situation, i.e. in other similar situations or in academic situations that are created specifically for learning purposes. From a didactic perspective, this knowledge becomes the resource and can be acquired in the form of *knowledge*, *skills* and *attitudes*.

4. SiD therefore differentiates between two different types of knowledge. One develops in practical action and is described as *procedural knowledge*. It is mainly *implicit* and *unconscious* and is linked to specific processes and situations, and is therefore not easy to acquire. The other results from abstract thinking and reflection and is described as *theoretical, declarative knowledge*. It is mostly *explicit* in nature and can be taught directly. However, it does not pertain to a mechanically understood dualism. The two types of knowledge may merge, one can become the basis of the other or both can develop into complex cognitive constructs.

5. SID assumes that there are *two types of learning,* similar to the two types of knowledge: one takes place in *real life* and has an *immediate, spontaneous* and *informal* nature, and the other takes place in *didactic situations* that are specially designed for this purpose and is *formal* and *institutional* in nature (although, of course, even the didactic situation has an aspect of reality). The two types of learning can combine or stimulate and enrich each other.

6. SiD is logically (mainly) responsible for learning in *didactic situations* and ensures that they are embedded in a strong relationship to reality, that is, in *real-life situations*. This happens through three steps, which trigger a *virtuous didactic cycle*. The first step contains the transposition (i.e. not only the transfer of the situation but also its interpretation) from the real-life situation to the didactic situation. The second step takes place within the didactic situation and includes analytical and synthetic processing. The third step relates to returning from the didactic situation back to the real-life situation, resulting in a transfer of the learning.

7. Part of the *virtuous didactic cycle* is a dual *reflection process*: the *analytical* and the *synthetic processing* of knowledge. Analytical processing questions and examines the real situation – the practice – in order to understand its properties, which in turn is in order to identify the implicitly required knowledge and to identify the resources required to deal with the situation. In the synthetic processing phase, the knowledge required for successfully dealing with the situation is developed, expanded and consolidated. This dual processing process requires the contribution and the practical knowledge derived from specific experiences as well as the systematic (declarative) expertise of the different disciplines and subjects.

8. In SiD, the reference of the didactic situation to the real-life situation can be *direct* during the analytical and synthetic processing, e.g. if it is possible to bring authentic first-hand experiences into the classroom. Wherever direct experiences are not available, an *indirect* reference can be established by way of examples, model-like situations or simulations.

9. Within the *virtuous didactic cycle,* SiD tries to maintain a *balance between the two types of knowledge* (theoretical and practical) and the *two types of learning* (through action or through 'studying'). This balance depends on the requirements of the specific teaching context, i.e. the students, the learning content, the learning centres and the available teaching material.

10. SiD formulates two basic criteria which have to be met. The first criterion is that of *integration*. This means that space has to be provided for different types of knowledge and learning during the classroom activity. The second criterion of *flexibility* follows from the first, and it means that the didactic action always has to be adapted to the specific teaching context.

11. In terms of general didactics, SiD is different from subject didactics and especially from the methods. Based on the criteria of integration and flexibility, it respects the special properties of subject didactics if they depend upon the specific teaching content, and it supports the meaningful and appropriate use of different methodological forms and techniques.

12. The teacher plays an important role in SiD, which is especially shown in designing and actively supporting the didactic processing process. The teacher is expected to be able to structure and design the didactic situation in a methodically diverse and flexible manner, for example using didactic scenarios, while at the same time providing the necessary space for theoretical and systematic knowledge and for experiential knowledge and reflection.

13. The objective of SiD is to ensure that students acquire the resources (declarative knowledge / know-how, procedural knowledge / skills, behaviours / attitudes), which enable them to deal with life situations competently. However, even in vocational training, the value of the knowledge to be taught is not determined solely by its situation-related suitability. Indeed, 'purposeless' knowledge should also be given due attention.

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